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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,431	12/22/2000	Mineo Kaneko	684.3120	8878

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EXAMINER

NGUYEN, LAMSON D

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 01/16/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/742,431

Applicant(s)

Kaneko et al.

Examiner

Lamson Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5,6,7 20) ☐ Other:

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DETAILED ACTION

Claim Objections

1. Claims 1, 10, 11, 16 are objected to because of the following informalities:

* claim 1, lines 19-21, "the first liquid" and "the second liquid" lack antecedent basis. The applicant is advised to check the remaining claims for possible similar objection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10-11, 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

* claim 10, it is not clear what orientation of <100> is.

* claim 11, it is not clear what orientation of <110> is.

* claim 16, line 24, it is not clear what "the order named" is.

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Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

5. Claims 1-8, 12, 15-16, 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Quintana (EP 0955174).

Quintana, applicant's admitted prior art, teaches the following:

* a group of first ejection outlet arrays each of which has a plurality of ejection outlets at predetermined intervals arranged in a direction different from the scanning direction, wherein corresponding ejection outlets in the respective ejection arrays are aligned in the scanning direction (figure 7 teaches group 34, 36, 38, and 40 to the left)

* a group, disposed adjacent said group of said first ejection outlet arrays, of second ejection outlet arrays arranged in a manner similar to said first ejection outlet array group (figure 7 teaches adjacent group 40, 38, 36, and 34 to the right)

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* wherein said first ejection outlet arrays include a first ejection outlet array 40 for ejecting the first liquid and a second ejection outlet array 38 for ejecting the second liquid (figure 7 teaches first array ejecting yellow ink and second array ejecting magenta ink)

* wherein said second ejection outlet arrays include a third ejection outlet array for ejecting the first liquid and a fourth ejection outlet array for ejecting the second liquid (figure 7 teaches third array 40 for ejecting yellow and fourth array 38 for ejecting magenta ink)

* wherein said first ejection outlet array group and said second ejection outlet array group are disposed such that first ejection outlet array and third ejection outlet array are adjacent to each other and that ejection outlets of the first array and the ejection outlets of the third array are disposed with deviation in a direction of arrangement of the ejection outlets so as to be complementary to each other in the scanning direction (figure 7 teaches the two arrays 40 are staggered to each other)

* a common liquid chamber for supplying the first liquid to the first ejection outlet array and the third ejection outlet array (figure 7 teaches first and third arrays 40 both eject yellow ink)

* third liquid different from the first and second liquid (figure 7 teaches cyan ink)

* wherein the ejection outlet arrays of the first ejection and second ejection groups are arranged such that inks of the liquid are symmetrical with respect to the first and third ejection outlet array (figure 7 teaches symmetrical arrays 34, 36, and 38 with respect to the two arrays 40)

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* a fifth ejection outlet array for ejecting a liquid different from the first and second ejection outlets (figure 7 teaches a fifth ejection outlet array 34 for ejecting black ink)

* wherein the first and second ejection array groups are provided on one orifice plate (figure 7 teaches all arrays are disposed on one plate)

* a printer carriage (figure 1)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quintana in view of Horikoshi (6315387).

Quintana teaches all claimed features of the invention except:

* a plurality of energy conversion element array groups for ejecting liquid

It is well-known in the art of ink jet printers to use heating elements, as taught by Horikoshi, column 1, lines 34-45.

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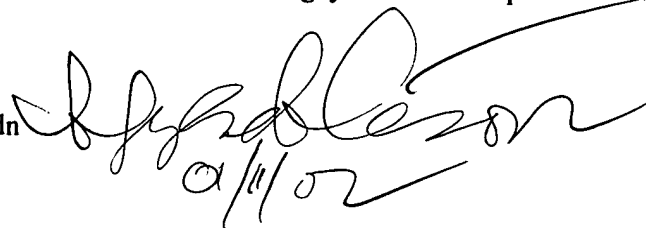
Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the invention of Quintana to incorporate the teaching of electrothermal energy converters taught by Horikoshi for the purpose of ejecting out ink drops.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Quintana.

Quintana teaches a plurality of nozzle arrays disposed on a substrate (figure 7). Quintana however does not specifically teach the substrate being made of a photosensitive epoxy resin material. It would have been obvious to one having ordinary skill in the art to use such material for the purpose of achieving nozzles, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamson D. Nguyen whose telephone number is (703)306-4547.

Ldn



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